PATENT COOPERATION TREATY

DMD P4L1

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43*bis*.1)

	Date of mailing *(day/month/year)* see form PCT/ISA/210 (second sheet)
Applicant's or agent's file reference see form PCT/ISA/220	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2004/007015	08.03.2004	06.03.2003

International Patent Classification (IPC) or both national classification and IPC
H04Q7/38

Applicant
QUALCOMM INCORPORATED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:	Authorized Officer
European Patent Office - Gitschiner Str. 103 D-10958 Berlin Tel. +49 30 25901 - 0 Fax: +49 30 25901 - 840	Alonso Maleta, J Telephone No. +49 30 25901-487

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was field, unless otherwise indicated under this item.

   ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material:

   ☐ a sequence listing

   ☐ table(s) related to the sequence listing

   b. format of material:

   ☐ in written format

   ☐ in computer readable form

   c. time of filing/furnishing:

   ☐ contained in the international application as filed.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

Box No. II Priority

1. ☒ The following document has not been furnished:

   ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

   ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

   Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 4,6,11,13,20,22,27,29,34,36

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination *(specify)*:

☒ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. 4,6,11,13,20,22,27,29,34,36 are so unclear that no meaningful opinion could be formed *(specify)*:

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the whole application or for said claims Nos.

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form	☐	has not been furnished
	☐	does not comply with the standard
the computer readable form	☐	has not been furnished
	☐	does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See separate sheet for further details

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-3,5,7-10,12,14-19,21,23-26,28,30-33,35,37
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-3,5,7-10,12,14-19,21,23-26,28,30-33,35,37
Industrial applicability (IA)	Yes:	Claims	1-3,5,7-10,12,14-19,21,23-26,28,30-33,35,37
	No:	Claims	

2. Citations and explanations

see separate sheet

Re Item III.

1. Claims 4, 6, 11, 13, 20, 22, 27, 29, 34 and 36 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined.

1.1 The statement "determining a first energy-per-chip ratio between the rate indicator and pilot signals based at least in part upon a said data rate" used in claims 4, 11, 20, 27 and 34 attempt to define the subject-matter in terms of the result to be achieved, without providing the technical features necessary for achieving this result. Therefore, no evaluation of the requirements of Article 33(1) PCT for such claims has been established.

1.2 The statement "determining a second energy-per-chip ratio between the data and pilot signals based at least in part upon said data rate" used in claims 6, 13, 22, 29 and 36 attempt to define the subject-matter in terms of the result to be achieved, without providing the technical features necessary for achieving this result. Therefore, no evaluation of the requirements of Article 33(1) PCT for such claims has been established.

Re Item V.

2. The following document is referred to in this communication:

D1 : US 2002/154610 A1 (CHEN TAO ET AL) 24 October 2002 (2002-10-24)

3. Claims 1, 8, 17, 24 and 31 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined.

3.1 The statement "determining the SNR of the first signal based at least in part upon the measured SNR of the second signal" used in claims 1, 8, 17, 24 and 31 attempt to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.

In order to evaluate the requirements of Article 33(1) PCT, it has been considered that in order to perform such determination, a table provides a ratio between the estimated SNR of the first signal and the measured SNR of the second signal, as disclosed in paragraphs 42 and 43 and figure 7 of the application.

4. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-3, 5, 7-10, 12, 14-19, 21, 23-26, 28, 30-33, 35 and 37 does not involve an inventive step in the sense of Article 33(3) PCT.

4.1 Document D1 discloses (the references in parentheses applying to this document) a method for a wireless communication system wherein a mobile station receives in the reverse link a signal over the first channel, reverse pilot channel R-PICH, and a second signal over a second channel, a supplemental channel R-SCH (paragraph 36). The base station monitors the level of the R-SCH and by taking the ratio of the R-SCH to the R-PICH calculates the traffic-to-pilot ratio in order to perform power control (paragraphs 95 and 102).

The subject-matter of independent claim 1 therefore differs from this known communication system in that instead of performing the determination of an estimated power signal from a measured power signal using a known ratio, it is performed the determination of the SNR from a measured SNR using a known ratio.

It is a normal feature in a wireless system to measure the signal-to-noise ratio in the different channels in order to perform power control (see paragraphs 7 and 99 of document D1). Therefore, the feature of using a ratio (see paragraphs 95 and 102 of document D1) in order to perform an estimation of a SNR in a first channel from a measured SNR in a second channel is not considered to be inventive compared to the fact of using a ratio in order to perform an estimation of the received power in a first channel from a measured received power in a second channel as disclosed in document D1.

Independent claims 8, 17, 24 and 31 define the equivalent features in terms of an apparatus, a device, a mobile terminal and a computer readable media to the corresponding method claim 1.

Therefore, the subject-matter of independent claims 1, 8, 17, 24 and 31 does not involve an inventive step.

4.2 The additional features of dependent claims 2, 3, 5, 7, 9, 10, 12, 14-16, 18, 19, 21, 23, 25, 26, 28, 30, 32, 33, 35 and 37 are already known from document D1:

- for claims 2, 3, 9, 10, 18, 19, 25, 26, 32 and 33: see paragraphs 42, 47 and 102 of document D1
- for claims 5, 7, 12, 14, 21, 23, 28, 30, 35 and 37: the above mentioned lack of clarity notwithstanding (see sections 1.1 and 1.2 of this communication), it is considered obvious in claims 5, 12, 21, 28 and 35 to determine the SNR of the pilot signal (or of the data signal for claims 7, 14, 23, 30 and 37) from the measured SNR of the rate indicator once the energy-per-chip ratio between the rate indicator and the pilot signal (or between the data and pilot signal for claims 7, 14, 23, 30 and 37) is known
- for claims 15 and 16: see figure 1 and paragraph 4 of document D1